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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/046, 121 03/20/98 HALL

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EXAMINER

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ART UNIT

PAPER NUMBER

2613

DATE MAILED:

12/20/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)
	09/046,121	HALL ET AL.
	Examiner	Art Unit
	Allen Wong	2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 02 October 2000.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-10 and 12-38 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-5,7,9,12,13,15-18,20-26,28 and 31-38 is/are rejected.

7) Claim(s) 6,8,10,14,19,27,29 and 30 is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are objected to by the Examiner.

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

15) Notice of References Cited (PTO-892)

16) Notice of Draftsperson's Patent Drawing Review (PTO-948)

17) Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

18) Interview Summary (PTO-413) Paper No(s) _____.

19) Notice of Informal Patent Application (PTO-152)

20) Other: _____

DETAILED ACTION

Response to Arguments

The examiner respectfully withdraws the restriction/election requirement since the independent claims 17, 31 and 38 are in fact very similar to the rejected independent claims 1, 24 and 37. Therefore, claims 17, 31 and 38 deserve to be examined.

Applicant's arguments with respect to claims 1, 24 and 37 have been fully read and considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, 7, 9, 12, 13, 15-18, 20-26, 28 and 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Uz (5,682,204) in view of Flannaghan (4,703,358).

Regarding claim 1, Uz discloses a method for encoding a frame, comprising:

(I) determining a macroblock activity level (col.8, lines 27-35; an activity level is measured which is the same as the determination of an activity level);
(ii) determining when said macroblock activity level exceeds a predefined threshold (see figure 3; note that a threshold is set and a determination means must exist to determine when the activity threshold is passed so that a course of action will be

taken due to the determination of whether the macroblock activity level exceeds a predefined threshold), wherein said macroblock activity level exceeding said predefined threshold indicates that said macroblock is associated with said noisy portion of said frame; and

(iii) adjusting encoding of said macroblock when said macroblock activity level exceeds said predefined threshold to conserve bits used in encoding said macroblock (see figure 3; note that if a threshold is exceeded, then intercoding is used which thereby reduces the bit-rate and conserve bits used in encoding said macroblock) and thereby save bits otherwise used to encode said noisy portion of said frame.

Although Uz may not appear to mention the limitation of "determining whether said frame includes a noisy portion, and if so, then for each macroblock of said frame", Flannaghan teaches the determination of noise in frames (col.3, lines 3-10; note that the erroneous frame difference value is the noisy portion of a frame, and of course, as any one of ordinary skilled would know that frames are comprised of macroblocks). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Uz and Flannaghan for noise reduction and adaptive encoding so as to provide accurate, efficient encoding schemes for producing high quality images.

Note claims 2, 3, 17, 24, 25, 31, 37 and 38 have similar corresponding elements.

As for claims 7 and 28, Uz discloses motion estimation process done on said macroblock (col.11, lines 20-26).

Regarding claims 9, 22-23 and 35-36, Uz discloses the determination of adjusted quantization level for use in encoding a macroblock (col.12, lines 50-53).

Regarding claims 4, 18 and 32, Uz discloses the comparison of "total activity of a frame macroblock" (col.5, lines 62-63). However, Uz fails to disclose the comparison of a minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock as disclosed by the applicant.

Therefore, it would have been obvious to one of ordinary skill in the art to compare the minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock for encoding accuracy and efficiency.

Regarding claim 5, Uz does disclose the calculation of average activity (col.11, lines 12-13) in frame macroblocks. However, Uz fails to teach the comparison of a minimum activity level with an average activity level in said multiple blocks of said macroblock. Therefore, one of ordinary skill in the art would obviously do a comparison of a minimum activity level with an average activity level in said multiple blocks of said macroblock for improving encoding accuracy and efficiency.

As for claims 12 and 13, Uz discloses a measure of a frame complexity value (col.12, lines 60-64). However, Uz fails to teach the calculation of a complexity threshold and the comparison of said frame complexity value. Therefore, it would have been obvious to one of ordinary skill in the art to calculate a complexity threshold from a group of frames, since an activity threshold can be calculated, and a comparison of complexity values is obvious to do from a group of complexity values for improving encoding accuracy and speed.

As for claims 15, 16, 20 and 33, one of ordinary skilled in the art would obviously

recognize that all digital devices require the flagging of ones and zeroes since digital logic dictates the well known use of a binary system in digital communications.

Regarding claim 26, Uz does teach the determination of an activity level (col.8, lines 27-35; the measure of an activity level is the determination of an activity level). However, Uz fails to disclose the comparison of a minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock as disclosed by the applicant. Therefore, it would have been obvious to one of ordinary skill in the art to compare the minimum activity level of said order with a next to minimum activity level of said order to derive said activity level for said macroblock for encoding accuracy and efficiency.

Note claims 21 and 34 have similar corresponding elements.

Allowable Subject Matter

Claims 6, 8, 10, 14, 19, 27, 29 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

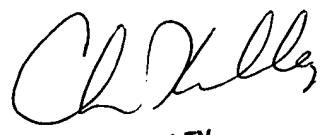
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (703) 306-5978. The examiner can normally be reached on Mondays to Thursdays from 9-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (703) 305-4856.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

AW
December 11, 2000


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
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